

MANAGING SOLID WASTE

July 2003

Volume 8 Number 1

Indiana Composting Facilities: 2002 Update

This volume updates volume 7, number 1 of *Managing Solid Waste*, "Indiana Composting Facilities: 2001 Update." See volume 3, number 2 of *Managing Solid Waste*, "Indiana Composting Facilities" for a detailed summary and history of Indiana composting facilities from 1994 through 1997.

Composting allows for the reclamation and reuse of materials such as discarded vegetative matter that would otherwise end up in Indiana's landfills and incinerators. The Indiana Department of Environmental Management (IDEM) administers a registration and annual reporting program for facilities composting vegetative matter. Historically, Indiana composting facilities process between 200,000 and 275,000 tons of vegetative matter annually (although in 2000 and 2002 this amount increased significantly) mostly leaves, wood, brush, and mulch. Between 35 and 45 percent of the compost produced each year is given away by local governments as part of their reuse and recycling efforts.

This paper is the 14th in the series *Managing Solid Waste* by the IDEM Office of Land Quality. For more information, contact the Facilities Data Analysis Section at (317) 233-4624. A copy of this paper can be downloaded at <http://www.IN.gov/idem/land/pubsforms/papers.html>.

INTRODUCTION

Composting is the transformation of vegetative matter and other organic materials into a humus (or compost) better suited as fertilizer than the original materials. The transformation is accomplished through natural biochemical processes. Composting is one of the main processes used to reclaim and reuse vegetative matter. Other processes include mulching and land application.

According to most recent U.S. Environmental Protection Agency statistics (1999, updated September 2001), yard wastes make up approximately 12% by weight of the municipal solid waste stream nationally. This includes mostly vegetative matter like leaves, brush, wood, and grass. The diversion of these materials from final disposal can increase the life of Indiana landfills. In addition, the re-use of discarded vegetative matter as either compost or mulch decreases the use of chemical fertilizers and other landscaping products that can have large negative environmental impacts.

At the end of 2002, there were 105 registered composting facilities in Indiana. This is an increase from the 50 facilities registered in 1994, the first year registration was required, and from 95 registered facilities in 2001. More than half of Indiana counties have at least one composting facility. It is important to note that several facilities were inactive at some point during the last five years. 1998 through 2002 totals are listed separately from previous year totals because prior to 1998, facilities submitted receipt totals in volume units; beginning in 1998, facilities submitted all data in tons. Thus, 1998 - 2002 figures are not comparable with those in previous years.

<i>In This Issue...</i>	<i>page</i>
Introduction	1
Regulatory and Operational Requirements	4
Materials Processed	4
Final Uses of Compost and Other Products	5
References and Further Reading	7

Written by: Richard Worth
Data Development: Michelle Weddle

Indiana Composting Facilities

Table 1. Tons of Materials Received by Indiana Composting Facilities in 2001 and 2002			
County	Facility	Tons Received 2001	Tons Received 2002
Adams	City of Berne Wastewater Treatment Plant	652	1,034
Adams	Decatur Compost Facility	1,257	1,555
Allen	Advanced Turf	57	57
Allen	Martin Service Systems	1,895	0
Allen	Ringenberg Garten Haus Compost Facility	0	2,446
Allen	National Serv-All Compost	4,415	6,254
Allen	New Haven Utility Maintenance Center	440	665
Bartholomew	Columbus- Bartholomew Yard Waste Site	7,963	7,668
Boone	Green Cycle Whitestown Site	7,128	13,232
Boone	Lamb Farms, Inc	6,104	6,902
Cass	Cass Co. SW Composting Site	4,475	5,535
Clark	Clark County Compost	8,090	12,620
Clark	Earth First of Kentuckiana Inc	7,220	12,769
Clark	Koetter & Smith	670	7,853
Clay	Craig Park Compost	0	850
Daviess	City of Washington Composting Facility	1,970	1,371
Dearborn	Greendale Composting	1,950	1,950
Decatur	Decatur Hills Inc.	0	1
Dekalb	Dekalb Co. Yard Waste Composting	4,988	5,146
Dubois	Ferdinand Street Department	0	54
Elkhart	City of Goshen Composting	2,030	2,430
Elkhart	Elkhart Co. Landfill	165	194
Elkhart	Elkhart Environmental Center	7,502	9,800
Fayette	City of Connersville Compost Facility	1,240	1,380
Floyd	Earth First of Kentuckiana Inc.	4,235	3,330
Fountain	Fountain Co. Recycling Station/Compost Site	95	71
Fountain	Harrison Steel Castings Compost Site	18	18
Franklin	Brookville Wastewater Treatment Plant Compost Facility	127	149
Grant	Bank View Farms Compost	62	1,260
Grant	Gas City Composting	365	300
Grant	Grant Co Compost Facility	24	467
Hamilton	Creative Landscaping and Compost Co.	4,712	4,749
Hendricks	Plainfield Correctional Facility	2,827	3,039
Henry	New Castle Correctional Facility	0	4,821
Howard	City of Kokomo Yard Waste Composting	2,125	3,104
Huntington	City of Huntington Landfill Composting	1,162	502
Jackson	Seymour City Composting Facility	3,746	4,460
Jasper	Town of DeMotte Compost Facility #2	150	1,050
Jefferson	City of Madison Transfer Station	1,187	1,300
Jefferson	Town of Hanover Composting Facility	332	84
Johnson	New Whiteland Wastewater Treatment Plant	188	304
Kosciusko	City of Warsaw Compost	1,056	682
Kosciusko	Recycle Site	792	0
Kosciusko	Superior Excavating	890	380
La Porte	Westville Correctional Facility Compost Site	2,949	5,761
Lagrange	Lagrange Co. Yard Waste Composting	410	410
Lagrange	Shipshewana Wastewater Treatment Plant	59	57
Lake	BioGreen, LLC	3,497	0
Lake	Enterprise Properties	0	1,356

Indiana Composting Facilities

Table 1. Tons of Materials Received by Indiana Composting Facilities in 2001 and 2002 (continued)			
County	Facility	Tons Received 2001	Tons Received 2002
Lake	Fertile Earth Gary Compost Facility	9,402	5,365
Lake	Greencycle of Indiana East Chicago Facility	2,577	0
Lake	Stuhlmacher Soil Service, Inc.	48	183
Lake	Town of Griffith Landfill	2,953	2,492
Lawrence	Lawrence County Compost	600	0
Madison	Adams Compost Facility	0	32,000
Madison	Pendleton Correctional Facility Compost	345	394
Marion	Greencycle of Indiana	23,472	20,295
Marion	Southside Landfill	8,780	10,450
Marion	Tiffany Lawn and Garden Supply Inc	45,000	46,972
Marion	Town of Cumberland	374	356
Marion	City of Indianapolis	0	7,000
Marshall	Van Vactor Farms Inc.	410	486
Monroe	Good Earth Composting	395	4,380
Monroe	Huntley Farm	0	3,078
Monroe	Topsoil Composting Service	4,568	2,763
Morgan	Greendell Farm	30	252
Newton	Good Earth Farms	0	35,000
Noble	Ligonier Compost	257	84
Ohio	Rising Sun Compost	0	263
Pike	Velpen C/D Landfill, Inc.	834	1,055
Porter	Crocker Composting Site	4,466	2,165
Porter	Valparaiso Municipal Composting Site	6,319	5,093
Pulaski	Town of Francesville	145	155
Pulaski	Town of Winamac	249	253
Putnam	Putnamville Correctional Facility	306	1,780
Randolph	City of Winchester Compost	456	443
Randolph	Randolph Farms, Inc.	2,197	2,976
Shelby	Caldwell Landfill	920	1,036
St. Joseph	Household Hazardous Waste and Recycling Center	2,325	4,578
St. Joseph	Organic Resources	34,868	52,588
St. Joseph	Pioneer Southern Horticultural Products	79	55
Steuben	Steuben Co. Yard Waste Composting	2,788	2,528
Sullivan	Wabash Valley Correctional Facility	900	784
Tippecanoe	Tippecanoe Co. Compost Facility	933	489
Tipton	City of Tipton Composting Facility	1,199	3,448
Vanderburgh	Botanical Service Center	243	192
Vanderburgh	Laubscher Meadows Composting Facility	8,711	8,492
Vigo	Victory Landfill	2,051	0
Vigo	White Violet Center	98	98
Wabash	The Compost	160	210
Warrick	Warrick Co Disposal & Recycling Center	0	1,295
Washington	Washington Co. Solid Waste Mgmt District Composting	3,760	3,580
Wayne	Richmond Landfill	0	2,628
White	Transfarm, Inc.	1,773	17,000
Whitley	City of Columbia Compost Facility	245	2,900
TOTAL		276,455	427,053

NOTE: Facilities currently registered but not receiving compost in either 2001 or 2002 are not listed in Table 1.

Indiana Composting Facilities

REGULATORY AND OPERATIONAL REQUIREMENTS

In 1992, the Indiana Legislature approved Public Law 84, now codified as IC 13-20-9. This law includes a restriction on disposal of vegetative matter. The ban applies to residential, commercial, and industrial sources. IDEM has issued guidance to interpret what materials are subject to the ban. (See Table 2. More information regarding the yard waste ban appears in the nonrule policy document “Important Notice Regarding the Yard Waste Disposal Ban,” available from IDEM’s Office of Land Quality.) This ban makes composting facilities an essential facet of solid waste management.












Composting facilities are required by state law to register with IDEM. Each registration is valid for five years, and can be renewed by submitting an updated registration form to IDEM 90 days prior to expiration.

There is no fee for registration or renewal. Composting operations that process less than 2,000 pounds of vegetative matter during a year are exempt from these registration requirements.

In addition to the registration requirements, the law requires that the facility operator submit an annual report to IDEM. The Composting Facility Annual Report indicates the amount of vegetative matter processed during the previous year, and the final use of the compost. The first reporting year was 1994.

MATERIALS PROCESSED

The increase in materials received in 2002 over 2001 receipts is due to a net increase in intake by existing facilities (only 24 reported decreases from 2001 totals) and a net increase of facilities accepting compost

Table 2. Summary of Indiana’s Yard Waste Ban		
Materials SUBJECT to Yard Waste Disposal Ban		Leaves
		Brush
		Woody vegetative matter greater than 3 feet in length
Materials EXEMPT from Yard Waste Disposal Ban		Grass
		Woody vegetative matter bagged, bundled, or otherwise contained and less than 3 feet in length
		Very small amounts of vegetative matter bagged, bundled, or otherwise contained and less than 3 feet in length AND combined with other solid waste
		Christmas trees
		House plants
		Vegetable food scraps
		Vegetative by-products not derived from landscaping maintenance or land clearing projects such as from flower shops and funeral homes
		IDEM-approved composted vegetative matter used as cover material for solid waste landfill

(thirteen facilities accepted compost in 2002 but not in 2001; only six facilities accepted compost in 2001 but not in 2002). Tons reported accepted is an approximation for two reasons:

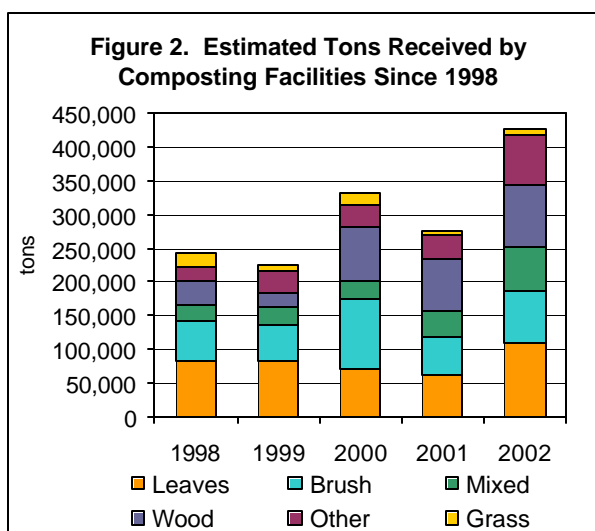
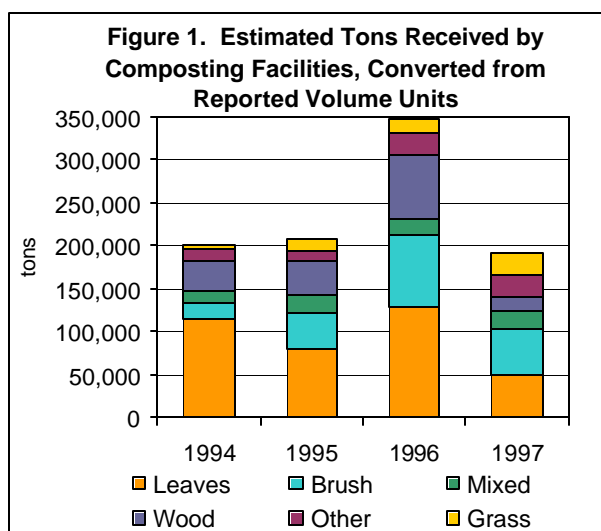
1. Beginning in 1998, composting facilities are required to report their intake in tons. Many facilities do not have weigh scales, and must convert volume measurements to weight based on conversion factors such as those in Table 3. Volume-to-weight conversion factors vary widely depending on the composition, moisture content, and compaction rate of the vegetative matter.
2. Some loads of materials are received in a manner that prohibits documentation by type and/or weight, especially small loads from residential customers. In 2002, 38 of the 95 active facilities or 40% received such undocumented loads.

Indiana Composting Facilities

Table 3. Examples of Conversion Factors for Compostable Materials (Cubic Yards Per Ton)

Material Description	Loose	Compacted
Brush	6.67	2.20
brush, shredded	5.37	--
Cardboard	6.67	--
food waste	1.30	--
Grass	5.00	2.50
Leaves	10.00	5.00
leaves, shredded	6.70	5.71
mixed yard waste, fall	8.10	3.60
mixed yard waste, summer	5.70	2.60
Paper	4.00	--
whole wood	7.14	5.88
wood, chipped	4.00	3.60

As shown in Figures 1 and 2, leaves accounted for a significant portion of total receipts through 1999. In 2000 and 2001, brush and wood accounted for the majority of receipts by weight; however, in 2002 leaves again comprised the greatest portion of receipts.

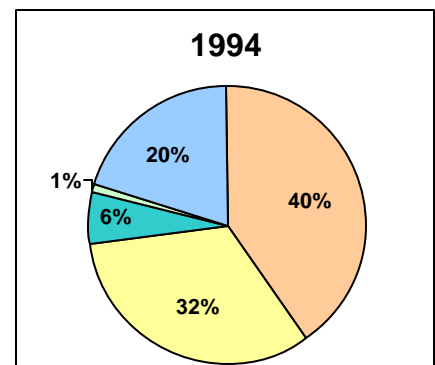
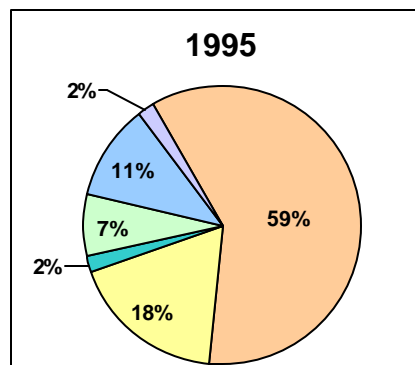
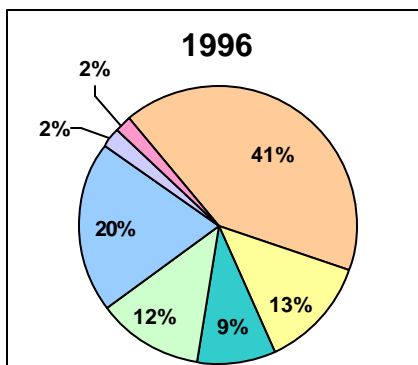
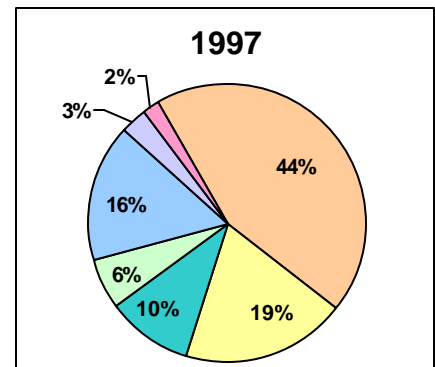
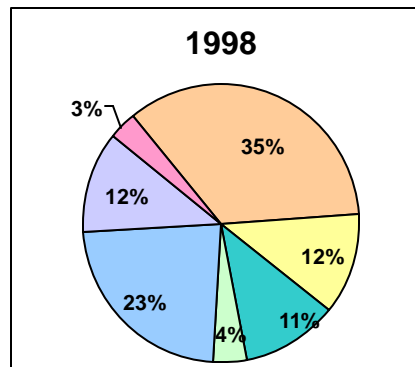
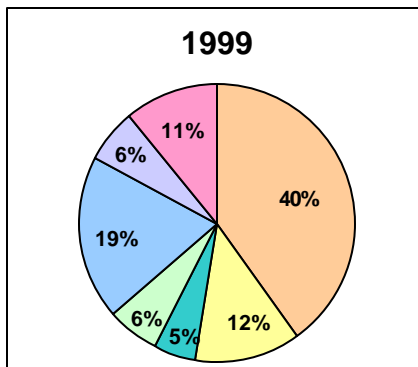
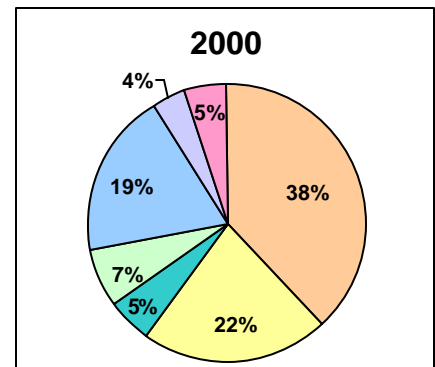
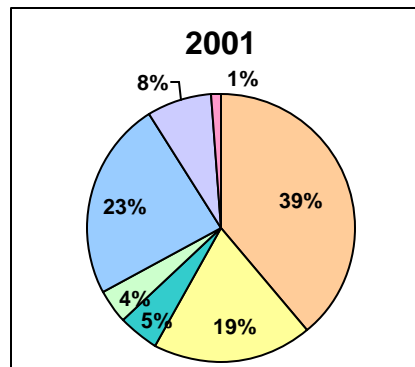
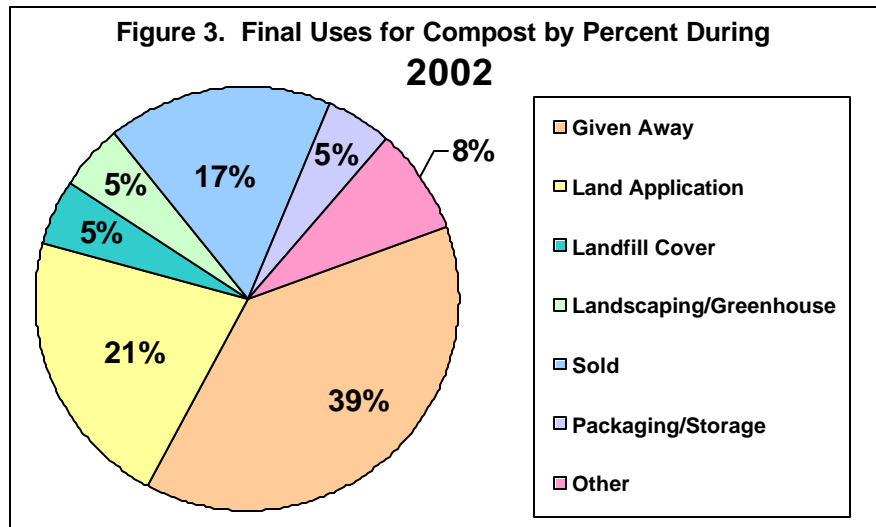


FINAL USES OF COMPOST AND OTHER PRODUCTS

Composting facilities may produce finished compost in as short as three months or as long as two years, depending on the type of raw materials, ambient temperature, and processing methods. At the end of 2002, 37% of the materials managed by Indiana registered composting facilities were still in the process of being converted to compost. Over the last nine years, materials received and still in process of being converted to compost at year-end ranged from 32 to 50%.

Figure 3 shows the final uses of materials that were successfully converted into either compost or mulch during the last nine years. In 2002, facilities gave away over 38% of total converted product, a decrease of less than 1% from the amount given away in 2001. Facilities giving away product are primarily those run by cities, counties, or solid waste management districts, which comprise just over half of the 95 facilities in Table 1. Only two privately-owned facilities gave away more than 10% of their product.

Indiana Composting Facilities



REFERENCES AND FURTHER READING

Indiana Environmental Statute IC 13-20-9,
Restrictions on Disposal of Vegetative Matter

Indiana Department of Environmental Management
Nonrule Policy Document, *Important Notice Regarding the Yard Waste Disposal Ban*, January 2000

Indiana Department of Environmental Management
and the Indiana Recycling Coalition, *Indiana Yard Waste Solutions*; January 1993

U.S. Environmental Protection Agency, Office of
Solid Waste and Emergency Response, *Municipal Solid Waste in the United States: 1999 Facts and Figures* (www.epa.gov/epaoswer/non-hw/muncpl/pubs/mswfinal/pdf)